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Original Study

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Big-Men and Small Chiefs: The Creation of Bronze Age Societies

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Abstract: This paper investigates to what extent the significant material changes observable at the end of the Neolithic reflect transformations of the underlying social dynamics. Answering this question will help us to understand the formation of Bronze Age societies. The analysis concerns southern Scandinavia with a certain focus on Denmark. The assumption is that the creation of Bronze Age societies must be understood as a long formative process that partly originated in the culturally-heterogeneous Middle Neolithic. Four aspects seem to have been essential to this process: the rise of the warrior figure, the reintroduction of metal, increased agricultural production, and the establishment of one of the characteristic features of the Bronze Age, the chieftain hall. These aspects do not appear simultaneously but are introduced step-by-step starting out in the late Middle Neolithic and early Late Neolithic to fully develop around 2000 BC. Consequently, this paper argues that the final Late Neolithic (LN II, c. 1950–1700 BC) was de facto part of the Earliest Bronze Age.

Keywords: Late Neolithic, Bronze Age, social transformation, Denmark, warrior, metal, agriculture, halls, Middle Neolithic.

1 Introduction

The Neolithic societies of southern Scandinavia were clearly demarcated from those of the Mesolithic by labour-intensive, large-scale construction works such as monumental tombs and enclosures. However, we do not yet see the long-distance, monopolized exchange of metal and prestige items that characterizes the Nordic Bronze Age societies from Period IB and onwards (i.e. from c. 1600 BC) and indicate developed social structures and exchange networks beyond those of the Neolithic.

The transition from Neolithic to Bronze Age societies in northern Europe is a theme that has occupied scholars through the years (see e.g. Earle & Kristiansen, 2010; Furholt, Grossmann, & Szmyt, 2016; Iversen, 2015; Kristiansen, 2015; Kristiansen & Earle, 2015; Kristiansen & Larsson, 2005; Prescott, 2009; Prescott & Glørstad, 2011; Vandkilde, 1996). This paper starts from the position that in order to understand the emergence of Bronze Age societies we will have to incorporate a long-term perspective reaching well into the 3rd millennium BC when pan-European phenomena such as the Corded Ware and Bell Beaker complexes changed Neolithic life and prepared the way for the appearance of Bronze Age societies.

No doubt, Bronze Age societies were different from those of the Neolithic, but when exactly did this transition take place and how do we explain the wide-ranging social transformations? Using Denmark as a case study, I focus on four aspects that seem to have been essential to this process: the accentuation of the warrior figure, the reintroduction of metal, an increased agricultural focus, and the construction of very large houses or *halls*.

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2 Neolithic Background

According to the traditional Danish and wider South Scandinavian chronology, the Neolithic constitutes three overall phases: Early Neolithic, Middle Neolithic and Late Neolithic (figure 1). Whereas the Early Neolithic can be described as rather homogeneous in cultural terms, only occupied by the Funnel Beaker culture (FBC), it was in social-terms a rather complex period. It was a highly progressive, productive, and ritually-rich period, which first and foremost framed the introduction of agriculture, animal domestication, and the emergence of Neolithic life. This included a wide range of monuments, varied and elaborate deposition practices, the development of complex pottery styles, expanding settlement patterns, and woodland clearances.

Early Neolithic (<i>FBC</i>)	4000-3300 BC
Early Neolithic I	4000-3500 BC
Early Neolithic II	3500-3300 BC
Middle Neolithic (<i>FBC, PWC, SGC</i>)	3300-2350 BC
Early Middle Neolithic	3300-2850 BC
Late Middle Neolithic	2850-2350 BC
Late Neolithic (<i>BBC, LNC</i>)	2350-1700 BC
Late Neolithic I	2350-1950 BC
Late Neolithic II	1950-1700 BC
Early Bronze Age	1700-1100 BC
Period IA	1700-1600 BC
Period IB	1600-1500 BC
Period II	1500-1300 BC
Period III	1300-1100 BC

Figure 1. General Neolithic and Early Bronze Age chronology of southern Scandinavia. Abbreviations: FBC: Funnel Beaker culture, PWC: Pitted Ware culture, SGC: Single Grave culture, BBC: Bell Beaker culture, LNC: Late Neolithic culture. Dates given in calendar years BC.

Among the significant Early Neolithic characteristics is an early copper horizon, which started in the final Mesolithic with a few imported single finds dated from c. 4500–3700 BC, and flourished in the later Early Neolithic (EN II, c. 3500–3300 BC), making south Scandinavia comparatively richer in metal than central Europe in this phase. The paramount focus was on heavy copper flat axes, which represent a significant amount of copper imported to South Scandinavia together with metal forging technologies in the later phase (Klassen, 2000). For this reasons, and because of the use of early dolmens constructed for single interments, some scholars have suggested the existence of more or less ranked societies in the late Early Neolithic (Klassen, 2000: 286–292; Kristiansen, 1982: 257–258; Randsborg, 1975, 1979).

With the beginning of the Middle Neolithic, the importing of metal ceased and we see the construction of passage graves, which indicate a more communal burial practice that included the mixed remains of men, women, and children. The early 3rd millennium BC was characterized by an increasing cultural diversity. From the very beginning of the millennium, we see the occurrence of the marine-focused and coastal Pitted Ware culture existing alongside the Single Grave culture (Corded Ware culture) of central and western Jutland. At the same time late Funnel Beaker societies lingered on in eastern parts of Denmark (Iversen, 2015).

Then, in the last third of the 3rd millennium BC metal was reintroduced to southern Scandinavia, though in small amounts but now including a new peculiar metal – gold. Together with the pressure-flaking flint

knapping technique and the widespread production of flint daggers made by use of this technique (figure 2), the reappearance of metal defines the Late Neolithic. Despite of clear regional differences (Lomborg, 1973: 96–97, 130–133), the Late Neolithic does not show clear cultural groupings except of late Bell Beaker influences in the early phase (LN I, c. 2350–1950 BC), mainly in northern Jutland (e.g. Sarauw, 2007, 2008, 2009; Vandkilde, 2001, 2007b).



Figure 2. Flint dagger from Thy, northern Jutland. Photo: Roberto Fortuna and Kira Ursem, The National Museum of Denmark, licence CC BY-SA.

3 Material Changes in the Later Neolithic

In order to address the main question of this paper, we should not just focus on the Late Neolithic but also include developments taking place within the preceding Middle Neolithic. By including the late Middle Neolithic (c. 2850–2350 BC) we might be able to identify elements of social change that can explain the changes visible in the Late Neolithic and Early Bronze Age. This approach should help us understand the formation of Bronze Age societies, not as an event centred around the early 2nd millennium BC, but as a result of deep socio-structural transformations some of which were rooted in culturally-heterogeneous Middle Neolithic societies. In order to identify these social changes in the archaeological record I will address the following four essential aspects that all point to the alteration of social dynamics:

3.1 The Rise of the Warrior

At the beginning of the 3rd millennium BC we see significant changes in the archaeological record. Around 2850 BC early Single Grave (Corded Ware) communities spread throughout the central and western parts of the Jutland Peninsula introducing a new burial practice, new beaker forms, new dress ornaments, and new

types of stone battle axes. Battle axes are well known from the previous Funnel Beaker culture. In the Early Neolithic they came in the form of polygonal battle axes clearly resembling contemporary central European copper axes. At the transition to the early Middle Neolithic (c. 3300–2850 BC) double-edged battle axes took over (Zápotocký, 1992). However, the number of Middle Neolithic battle axes was limited, less than 500 have been recorded from Denmark deriving from different contexts including megalithic tombs, wetlands, settlements, and stray finds (Ebbesen, 1975: 174, 206–207, fig. 161).

With the emergence of the Single Grave culture we see a significant increase in the number of battle axes of several hundred percent. Not only were new types of axes obtained but they show a very strong affiliation to burials (presumably male) indicating that the social and symbolic meaning of battle axes must have changed significantly (Iversen, 2015: 46–50, 89–90, fig. 4.43). Unfortunately, the sandy soils of central and western Jutland do not generally preserve bones, only the contours of the bodies are preserved, why gender determination and anthropological analyses are rare. However, battle axes, flint axes, arrowheads, and blades are associated with a right crouched position and must be interpreted as male burials, whereas amber beads are associated with a left crouched position and indicate female burials (Glob, 1945: 160–165; Hübner, 2005: 584–594). Anthropological analyses carried out on remains from Corded Ware cemeteries in southern Germany and Bohemia confirm such gender-differentiated burial customs.

One of these cemeteries is Vikletice, in Bohemia. Here, battle axes and mace heads are related to male graves and seem to have symbolized not only high status but also a certain inherent warrior identity promoting the creation of ‘warrior hoods’ (Vandkilde, 2007a: 67–71, 79–87; Wiermann, 2002). Somewhat similar interpretations including warrior brotherhoods (*Männerbünde*) are also applied in the description of Late Neolithic/Bronze Age cultures such as the Yamnaya culture and the Danish variant of the Bell Beaker culture (e.g. Anthony, 2007: 364; Kristiansen et al., 2017; Sarauw, 2007). In general, a certain warrior identity seems to develop in the later European Neolithic to become a central element of the Bronze Age male ideal (C. J. Frieman et al., 2017; Harding, 2007; Horn, 2013; Treherne, 1995).

In this context, the pastoral Yamnaya culture is of particular interest as migrations from the Pontic-Caspian steppe in the early 3rd millennium BC seem to have played a key role in the formation of the Corded Ware, as indicated by recent aDNA studies (Allentoft et al., 2015; Haak et al., 2015).

As recently suggested by Kristian Kristiansen *et al.*, the social system that provided the rapid spread of a mobile pastoral-based lifestyle, accentuating the battle axes as the prime male and warrior attribute, was likely to have included war-bands of young males living off raiding and proving themselves before entering the tribe proper. Such groups of young males were highly mobile and willing to take risks by undertaking pioneering migrations (Kristiansen et al., 2017). A striking feature of many early Corded Ware societies is actually that male burials predominate; on the Jutland Peninsula close to 90% of the graves from the earliest phase (c. 2850–2600 BC) are male burials (Hübner, 2005: 632–633, fig. 454). Furthermore, female exogamy has to be expected when migrants are predominantly male. That this was actually the case is supported by isotopic and aDNA studies from central Europe (Goldberg, Günther, Rosenberg, & Jakobsson, 2017; Kristiansen et al., 2017; Sjögren, Price, & Kristiansen, 2016).

From the published data, and due to the state of the archaeological record, it is hard to tell to what extent the Jutland Single Grave culture was genetically related to the steppe population. However, I find it reasonable to expect the occurrence of the Single Grave culture in Denmark as a result of increased mobility in the early 3rd millennium BC, far-reaching communication networks, and the migration of smaller groups of individuals (Iversen, forthcoming).

As I have tried to show above, the warrior, as we know him from the well-preserved Danish Bronze Ages burials (figure 3), was actually born in the early 3rd millennium BC with the introduction of incipient warrior institutions. Thus, it is hard to imagine the formation of the Bronze Age societies that we know of from large parts of Europe without the occurrence of the warrior ideal introduced with the spread of Corded Ware and Bell Beaker communities. The incipient focus on the warrior figure was accentuated in the Late Neolithic with the focus on flint daggers at the expense of battle axes – the number of Danish flint daggers exceeds 4500 pieces (Lomborg, 1973: 21). However, first with the Bronze Age proper do we see the ultimate warrior characteristics in Scandinavia – the sword.



Figure 3. Oak coffin, male burial from Trindhøj (coffin A), southern Jutland. Early Bronze Age, Per. II. Photo: Roberto Fortuna and Kira Ursem, The National Museum of Denmark, licence CC BY-SA.

3.2 Return of the Coppersmith

After the rise and flourishing of the Early Neolithic copper horizon, the metal import suddenly seems to decrease. Consequently, metal objects are largely absent during the final 4th millennium BC and most of the 3rd millennium BC and only reappeared a thousand years later with the beginning of the Late Neolithic. However, small quantities of copper, in the form of small spirals and a fragment of a basket-shaped earring did reach southern Scandinavia during the early and mid-3rd millennium BC as they have been found in a few Battle Axe culture (Corded Ware) graves in Scania (Malmer, 2002: 158). Probably, some undated copper flat axes and a decorated copper disc found in a stone cist at Rude, eastern Jutland, also belong to this period (Klassen, 2000: 198–209; Randsborg, 1988).

Then, with the beginning of the Late Neolithic not only copper, but also gold reached southern Scandinavia for the first time. Generally, metal seems to have been a scarce resource in central and northern Europe in the late 4th and early 3rd millennium BC, which could be a consequence of the decline in southeastern European copper production that took place around 3700 BC (Vandkilde, 2007a: 48–58). However, the European production of copper flat axes continued until a renewed, largescale metal production took off at the end of the 3rd millennium BC. Thus, the amount of metal reaching southern Scandinavia appears to have been directly linked with fluctuations in copper production in southeastern Europe.

In a thorough study of the Late Neolithic and Early Bronze Age metal finds from Denmark, Helle Vandkilde (1996) records 72 finds from the period c. 2350–1950 BC (LN I). Finds are distributed across Denmark with northern Jutland as the primary area of distribution. The finds include primarily copper flat axes but also a tanged copper dagger, a few copper ornaments, and Bell Beaker inspired gold sheet ornaments such as *lunulae* and rings with oar-shaped ends. Even though the metal objects constitute a new and eye-catching feature in the Late Neolithic, they could hardly have had any larger impact on the societies due to their relative scarcity. A total of 72 objects distributed over a period of c. 400 years (c. 2350–1950 BC) only make an average consumption of 0.18 metal objects per year.

After c. 2000 BC, the number of metal objects increased significantly. Vandkilde ascribes 268 finds to this period of c. 250 years (LN II, c. 1950–1700 BC), which makes an average consumption of 0.9 metal objects per year – or five times as many as in the early Late Neolithic (LN I). Besides, a range of new types were introduced such as flanged axes, dagger blades, halberds, gold and copper/bronze Noppenrings, spiral rings, solid-cast copper/bronze rings, and from Period IA also dress pins and spearheads (figure 4). Furthermore, we see the establishment of a local production of metal objects and the development of bronze handicrafts that most likely included the classical Bronze Age *cire perdue* technique. Most objects were still made of copper, only one third can be categorized as tin-bronzes. A similar picture goes for Period IA of the Bronze Age (Vandkilde, 1996: 191–222, 263–264).



Figure 4. The Skeldal hoard, eastern Jutland. Late Neolithic II. Content: Three flanged axe, a fragment of another axe, a flanged chisel, a solid neck ring, a spiral ring, a spiral bead, two *Noppenrings*, and a beehive-shaped box with lid containing two gold *Noppenrings*. Except for the locally made axes, the hoard contains imports from the Únětice area (see Vandkilde 2010 for further details). Photo: Lennart Larsen, The National Museum of Denmark, licence CC BY-SA.

Metal objects are now found in eastern and central Denmark. This is a rather new situation compared to the period prior to 2000 BC, when northern Jutland was the centre of gravity. The change of the metal object's main distribution clearly mirrors the cessation of the Bell Beaker culture in western Europe around 2000 BC and the onset of the classic Únětice Bronze Age in central Europe. Since the inspiration for the Danish Late Neolithic metal production mainly came from the western Bell Beaker areas, northern Jutland was, as a part of the Bell Beaker cultural zone, the natural centre for the revival of metal imports and technology. Hence, as the Bell Beaker culture ceased and the Únětice culture flourished in central Europe the exchange and contact networks changed in favour of the Únětice area, which influenced South Scandinavia from across the Baltic Sea (Iversen, 2015: 108–111; Vandkilde, 1996, 2001, 2007b).

3.3 The Farmer's Revival

After the introduction of agriculture and animal domestication around 4000 BC, the late Middle Neolithic features some degree of 'de-Neolithization' (Iversen, 2013). The development in the settlement pattern within the Funnel Beaker period (c. 4000–2800/2600 BC, corresponding to the Early Neolithic and early Middle Neolithic) can be described as one of centralization and enlargement with larger sites and occupations of longer duration.

Then, from around 3000 BC until c. 2450 BC, we see an offshoot of the Pitted Ware phenomenon of the Scandinavian Peninsula reaching the northeastern coasts of Denmark with some major sites located in northeastern Jutland. In addition, we see a range of minor sites or hunting stations indicating a mobile lifestyle with seasonal exploitation of the natural resources. In cases when bones have been preserved they show a broad-spectrum economy consisting of husbandry, hunting, fishing, and gathering with a certain importance attached to the marine resources (including fish, shellfish, and seal), which have been extensively exploited. Wild species predominate in proportion to domestic species (mainly cattle) constituting a range of aquatic birds, fox, otter, beaver deer, wild boar, horse, elk, aurochs, and brown bear. Cereal grains have been found at some sites and farming is furthermore indicated by the existence of quern-stones and pottery with grain impressions (Iversen, 2010, 2016; Jennbert, 2014; Richter, 1991).

At the same time as we have remaining late Funnel Beaker populations focusing on an agrarian economy living close to hunter-fisher-gathering Pitted Ware groups, the establishment of Single Grave communities (c. 2850–2250 BC) in western and central Jutland show another subsistence-economic focus. The economy of the Single Grave culture was presumably centred on husbandry with a supposed focus on cattle, sheep and, on a smaller scale, the cultivation of cereals; mainly naked barley. Even though farming played a role in the Single Grave economy, the focus on the sandy soils of central and western Jutland together with short-lived dispersed settlements made up of individual light built houses, shows a significant change in the lifeways of the Neolithic. Pastoral farming is further indicated by a dramatic increase in grasslands and general deforestation at the time of the occurrence of the Single Grave culture in Jutland. Woodland and scrub was cleared and plantain, grasses, and herbs became frequent. The heath spread and was maintained by regular burning as a result of an increased need for grazing (Andersen, 1993; Andreassen, 2009; Iversen, 2015: 71–72 with further references; Klassen, 2005: 34–39; 2008).

Then, at the beginning of the Late Neolithic arable agriculture seems to have gained in importance. The archaeobotanical evidence points to an increased diversification in cereal types and naked barley, emmer wheat, and spelt were cultivated at the same time on the same sites. This diversification of crops also meant a diversification of risk, which made agriculture a more stable food source by reducing the risk of total harvest failure (Andreassen, 2009). Another aspect that indicates an increase in arable agriculture is the production of numerous pressure-flaked flint sickles. These appear from the beginning of the Late Neolithic, with the pressure-flaking technique, and continue in use throughout the Early Bronze Age. Many sickles bear indirect evidence of having been used for harvesting as they show traces of gloss, a shiny silica coating deriving from the cutting of silica-rich grasses and plants (Iversen, 2015: 104, 121–122 with references).

Thus, the Late Neolithic stands out from the Middle Neolithic ‘de-Neolithization’ in its increased focus on arable agriculture as the main subsistence economic source. A very likely consequence of the intensified agricultural practice was a marked increase in stature of the south Scandinavian Late Neolithic–Early Bronze Age population compared to the Middle Neolithic (Tornberg, 2015). Furthermore, it is with the beginning of the Late Neolithic that arable agriculture finally seems to have taken hold on the northern parts of the Scandinavian Peninsula (Prescott, 1996, 2009) and from c. 2000 BC onwards we see an increased utilization of the landscape in various places in southern Scandinavia with new woodland clearances in some areas (Digerfeldt & Welinder, 1985, 1988; Dörfler, 2008; Robinson, 2003).

3.4 The Hall-Builders

In a Danish context, Middle Neolithic houses are generally rare. When two-aisled Neolithic houses are recorded during excavations they most often date to the Early Neolithic/early Middle Neolithic Funnel Beaker culture or to the Late Neolithic (P.O. Nielsen, 1989, 2000).

When it comes to the Pitted Ware culture, no clearly distinguishable dwellings are known from Denmark, but smaller hut structures measuring from 2 to 7 square meters have been recorded on some Swedish Pitted Ware settlements (Larsson, Lemdahl, & Lidén, 2014: 90–92; Malmer, 2002: 97–126). Similarly, remains of house constructions from the Single Grave culture are scarce and when recovered they are mainly dated late within the period. The houses belonging to the Single Grave culture are usually light post-built two-aisled

structures with or without sunken floors in the form of shallow depression secondary filled with settlement refuse. Sites are small and dispersed containing only a few finds, presumably reflecting a mobile lifestyle based on herding. A similar dispersed settlement organization with isolated, small, and light built house structures are known from southern Sweden and central Europe (Larsson, Lemdahl, & Lidén, 2014: 115–117; J. Müller & Seregély, 2008).

With the Late Neolithic, traces of proper house constructions reappear on a larger scale in the archaeological record with sites holding more than 20 houses (see Iversen, 2015: 117–123 for general review; Sarauw, 2006). In cases when radiocarbon dating has not been applied, houses can usually be typologically dated to the Late Neolithic/Early Bronze Age until c. 1500 BC, when three-aisled houses were introduced. The general picture of the Late Neolithic house shows a further development of the two-aisled longhouse with or without sunken floors. Still, houses came in modest dimension varying from 5–20 meters in length (Sarauw, 2006: 54, 63–65). However, this picture changes radically from c. 2000 BC onwards when very large houses appear measuring almost 50 meters in length. Examples of such large houses, ranging from c. 30 to 47 m in length, have been found at sites such as Hemmed Plantage and Hemmed Kirke in eastern Jutland, Stuvhøj and Vinge Station in eastern Zealand, Limensgard on Bornholm and at Almhov, Piledal, and Stangby in Scania (Artursson, 2005; for a discussion of the longhouse as a transformative element in society see Artursson, 2015; Boas, 1993; Boye, 2006: 143; Brink, 2013, 2015; Johannsen, 2017; Larsson & Larsson, 1984; F. O. Nielsen & Nielsen, 1985, 1986; P. O. Nielsen, 1998, 1999).

It is obvious to see the significant enlargement of some of the South Scandinavian houses as a result of the enhanced wealth in the form of metal that can be seen from c. 2000 BC, together with the supposed increase in agricultural productivity. As mentioned above, the increased number of metal objects was due to closer contacts with the flourishing central European Únětice culture within which similar, and even longer, contemporary two-aisled houses are found (Nadler, 2001; P.O. Nielsen, 1999: 159–161; Schefzik, 2010; Walter, Mecking, Wehmer, Jahn, & Birkenbeil, 2008: 7–15). Thus, the occurrence of very large houses probably reflects marked differences in social status and wealth resulting in the appearance of what we can term *chieftains' halls*. These large-scale two-aisled houses were the predecessors of the three-aisled chiefly halls of the Early Bronze Age representing the consolidation of a social order with accentuated differences in status and wealth (Kristiansen, 2006; Kristiansen & Larsson, 2005: 277–279; Randsborg, 2011).

4 Social Transformations and Chronological Implications for the Neolithic/Bronze Age Transition

Two of the most significant features of the Late Neolithic are flint daggers and the reintroduction of metal. The appearance of a new weapon type, the dagger, did not only further accentuate the new male role and warrior perception introduced with the Single Grave culture, but it also indicates that new ways of fighting gained ground. Daggers were the latest innovation in the field of weapons technology and became both a strong brand and the primary status weapon in the centuries that followed. In this way they can be seen as precursors of the Bronze Age swords – both were objects specifically designed for combat (see Treherne, 1995: 109 with references; for the use of Bronze Age swords see Kristiansen, 2002).

One can of course question the usefulness of flint daggers due to their delicate and fragile nature. However, instead of just writing them off as useless for any real fighting the significant focus on flint daggers in the Late Neolithic can instead be considered indicative of the way fighting took place. The use of daggers would have required very close face-to-face fighting situations, or even ritualised duels, in which daggers might have been used to deliver the final *coup de grâce* to a defeated enemy (Christensen, 2004: 142; for a elaborate discussion of the function of flint daggers as weapons see Varberg, 2015).

However, daggers come in many sizes and some are heavily resharpened whereas others have probably never been used. Therefore it is also highly probable that they served a variety of different functions (C. Frieman, 2010: 39–40). Among these functions, one should not exclude the possibility that some daggers actually functioned in accordance with their design – as real fighting weapons. On a larger symbolic scale, the flint daggers symbolized the warrior figure as he is presented in the somewhat later Bronze Age oak

coffin burials. The relationship between flint daggers and Bronze Age swords are further accentuated by the presence of flint swords clearly imitating bronze forms (figure 5). Short swords measuring from 27 to 41 cm made entirely of flint are known from the Early Bronze Age, as are more flint handles and edge parts from composite flint swords originally mounted in unpreserved frameworks presumably made of wood or bone. In addition, one flint scimitar is known (S. Müller, 1907: 79–83; Petersen, 1993: 135; Rønne, 1988; for the relationship between originals and copies see discussion by Sørensen, 2012 with references).

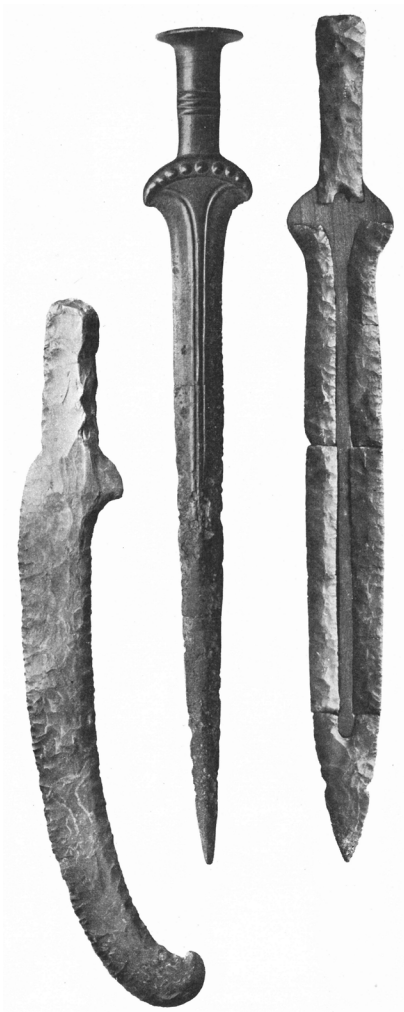


Figure 5. Flint scimitar (35.5 cm) from Favrskov on Funen, bronze and flint short swords (both 43 cm). The flint composite short sword consists of 6 pieces of flint (here mounted on a modern wooden framework) and derive from an Early Bronze Age burial mound at Åtte in southwestern Jutland. After Glob 1952.

This brings us to the other significant Late Neolithic feature, metal. Even though limited in number, the presence of metal objects bears witness to the establishment of far-reaching contact and exchange networks, which then developed further from around 2000 BC, as a result of increased links with the Únětice culture. However, the amount of imported metal had not yet reached a level that allowed the creation of formal hierarchies.

The interesting question is of course why metal stayed in southern Scandinavia in the Late Neolithic and not in the Early Neolithic. Except for the external fluctuations in the production and distribution of copper in central and southeastern Europe, one explanation could be a supposed economic surplus gained through a reinforced agricultural focus. This surplus could be invested in trade and exchange with early

Únëitice Bronze Age communities. Furthermore, metal objects seem to be of enhanced importance in the social competition and manifestation in southern Scandinavia at the end of the 3rd millennium BC compared to the end of the 4th millennium BC. In contrast to the Early Neolithic, metal became (from c. 2000 BC) an inevitable precondition for the production of ‘international’ status symbols and up-to-date weaponry such as daggers, halberds, spearheads, gold and bronze rings etc. The necessary requirement of bronze and gold meant that it became harder to manifest oneself as an influential person or ‘big-man’ without access to these prestige goods. As a consequence, formal hierarchies and centralization of wealth developed further and paved the way for the classical Nordic Bronze Age with its developed contact networks, wide-ranging communication and exchange routes, elite lifestyle etc. (Iversen, 2014; Kaul, 2013; Kristiansen & Earle, 2015; Kristiansen & Larsson, 2005; Ling, Hjarthner-Holder, Grandin, Billstrom, & Persson, 2013; Ling et al., 2014; Ling & Uhnér, 2014; Varberg, Gratuze, & Kaul, 2015).

The generally rich and complex deposition practice of the Neolithic included among other elements offerings of flint axes, bog pots, amber beads, and human individuals (cf. Bennike, 1999; Ebbesen, 1995; Koch, 1998; P.O. Nielsen, 1978). Hoards and depositions show the display of wealth and surplus, probably deposited as the culmination of large gatherings and feasts, which included the distribution of food and drink. The variation in length evident in first flint axes and later on also in daggers, indicate that supreme examples functioned as elite items that were used as status symbols, bride price etc. What we see in the Neolithic, is probably the appearance of some kind of ‘big-man’ competition for power and recognition through feasts and potlatch-like giveaways. By sponsorship of religious ceremonies, exchange of gifts and favours, and the hosting of great feasts, the big-man can develop tribal rank and leadership and gain greater renown (cf. Godelier & Strathern, 1991; Hayden, 1995; Liep, 1991; Sahlins, 1963; Strathern, 1971). However, this status was not yet formalized into fixed hierarchies. One of the reasons for this lack of formalized hierarchization was probably that it was difficult to monopolize the necessary raw materials – for example flint for the production of flint axes and daggers (Kristiansen & Earle, 2015; Sarauw, 2007).

Copper and gold, on the other hand, held opportunities for control by powerful and influential lineages or individuals, as these metals could only be obtained through exchange. Consequently, if upcoming chiefs were able to monopolize external exchange, increased social stratification was thereby facilitated and might have led to the formation of self-perpetuating elites. The occurrence of large chieftains’ halls and the increasing number of metal objects evident from 2000 BC onwards shows that certain individuals and/or lineages were successful in creating a production surplus to be exchanged for metal objects. Importantly, these lineages were able to obtain influential positions in the exchange networks over time. The surplus on which these lineages founded their positions could, as already argued, very well be based on the increased agricultural activity that is evident from the beginning of the Late Neolithic (see also Kristiansen, 2006; Kristiansen & Earle, 2015).

As it appears from the review of the Late Neolithic presented above, significant social changes occurred around 2000 BC. In order to recognize the significant and wide-ranging social consequences these changes had for the establishment of fully developed Nordic Bronze Age societies, I support the incorporation of the final part of the Late Neolithic (LN II, c. 1950–1700 BC) into the Bronze Age as also advocated for by other scholars.

Due to the marked changes that took place around 2000 BC, i.e. the LN I/II transition, Jørgen Jensen has proposed including LN II in the Bronze Age and naming the Period the ‘Earliest Bronze Age’ (c. 1950–1700 BC). Accordingly, the Early Bronze Age (Periods IA/B, II and III) succeeded the Earliest Bronze Age around 1700 BC (Jensen, 2002: 14–16). Leif Karlenby has expressed a similar view regarding central Sweden. Together with Period IA of the Bronze Age, LN II constituted a time of transition, while Period IB was related to Period II and the classic Bronze Age rather than period IA (Karlenby, 2008; see also Randsborg, 1996: 66). As these views clearly diverge from the traditional understanding of the Late Neolithic and the beginning of the Bronze Age, c. 1700 BC, they require further comments and the formation of a qualified opinion.

The weightiest argument for the inclusion of LN II in the Bronze Age is the establishment during this period of a characteristic local production of metal objects and the development of bronze handicrafts that most probably included the classic Bronze Age *cire perdue* technique. The LN II metal objects are mostly made of copper with high level of impurities and their tin content varies considerably. Only about one third

of the 268 metal objects from this period can be categorised as tin-bronzes consisting of c. 90% copper and 10% tin. This picture remained largely unchanged in Period IA although the number of metal objects increased slightly (Jensen, 2002: 36; Vandkilde, 1996: 206, 263–264, fig. 279; 2007a: 101–102).

LN II and Period IA are actually very similar with respect to metal technology, amount of metal, and number of objects found. In comparison, LN I has fewer and lighter metal objects, while Period IB shows greater numbers and the objects are also heavier and thereby contain more metal. As a logical consequence of this gradual development in the use of metal and metallurgical know-how, Vandkilde defines LN II and Period IA as one stage in the metallurgical development and describes it as a kind of prelude to the classic Nordic Bronze Age, beginning with Period IB. However, she retains the chronological division into LN I, LN II, and Period IA (Vandkilde, 1993; 1996: 263, 294, fig. 134; 2014a, 2014b).

Even though metal reoccurred at the beginning of the Late Neolithic, the big increase in the number of objects happened around 2000 BC with the beginning of LN II and then again with the transition to Period IB of the Bronze Age (c. 1600–1500 BC) (see Vandkilde, 1996: fig. 279; 2014a: fig. 2). Considering the social transformations of the period in question, it only seems reasonable to include LN II in the Bronze Age. Together with LN II, Period IA (c. 1700–1600 BC) should be viewed as an ‘earliest’ or ‘proto’ Bronze Age (see Iversen, 2015: 29–31 for an elaborate discussion). From c. 1600 BC, onwards (Per. IB and especially Per. II) we see the breakthrough of the Nordic Bronze Age as also stated by Vandkilde (2014a). Of course, it is difficult to pinpoint social transformations in terms of specific dates; however, it seems that from c. 2000 BC development was accelerating towards the establishment of Bronze Age societies leaving no turning back to the less formalized and less elitist social structures of the Neolithic.

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